REMARKS

STATUS OF THE CLAIMS

Claims 34, 36, and 48-52 were pending in the application. No claims have been added, canceled, or amended.

I. REJECTION UNDER FIRST PARAGRAPH OF 35 U.S.C. § 102(b)

The Examiner has rejected claims 34, 36, and 48-52 under 35 U.S.C. § 102(b), as allegedly being anticipated by US Patent No. 5,837,460 ("the '460 patent"). The Office Action alleged that the '460 patent discloses a method for ameliorating the effects of inflammation, including rheumatoid arthritis in a mammal comprising administering a therapeutically effective amount of an antibody to M-CSF and cited the entire document, the Abstract, and columns 5 and 9.

Applicants respectfully maintain that claims 34, 36, and 48-52 are not anticipated by the '460 patent as the '460 patent does not disclose the use of M-CSF antibodies to treat rheumatoid arthritis. The Abstract of the '460 patent states that:

> A method of identifying peptides which mimic biologically active proteins is disclosed. The method comprises the steps of making a recombinant antibody library from genetic material obtained from an animal which has been immunized against antibodies that bind to the biological active protein to the mimicked. Recombinant antibodies are screened to identify antibodies which compete with the biological active protein. Peptides which comprise the recombinant antibody's CDR sequences are synthesized. Synthetic peptides which mimic GM-CSF are also disclosed.

Thus, the Abstract sets out a method that involves making antibodies to an antibody against a protein. In contrast, the claimed invention relates to the use of an antibody against a M-CSF, and does not relate to making an antibody against an antibody to a M-CSF.

The summary of the invention also bears the conclusion out that the '460 patent relates to making antibodies against antibodies and identifying peptides from antibodies against antibodies (col. 2, lines 20-54):

The present invention relates to methods of identifying peptides that have 5-30 amino acids which mimic biologically active proteins. The methods of the invention comprise the steps of:
1) inoculating a first animal with an amount of a biologically active protein sufficient to invoke an immune response which includes antibody production by the first animal against the biologically active protein;
2) isolating antibodies from the first animal;
3) inoculating a second animal with an amount of the isolated antibodies sufficient to invoke an immune response which includes antibody production by the second animal against the anti-biologically active protein antibodies;
4) isolating RNA from spleen cells from the second animal and generating CDNA from such RNA;
5) inserting the CDNA into an expression vector to form recombinant expression vectors and introducing the recombinant expression vectors into suitable host cells to produce transformed host cells which express the CDNA and produce proteins encoded thereby;
6) identifying proteins which are recombinant antibodies, which bind to monoclonal antibodies specific for the biologically active protein and which compete with biological active protein to bind with monoclonal antibodies specific for the biologically active protein;
7) identifying amino acid sequence of complementarity determining regions of the recombinant antibodies; and
8) synthesizing peptides with amino acid sequence that consist of between 5-30 amino acid residues and which comprise the identified amino acid sequence.
The present invention relates to synthetic peptides which mimic GM-CSF. (emphasis added)

The specification of the '460 patent again talks about making anti-antibodies as a basis for deriving small peptides that mimic a biologically active protein on col. 5, lines 6-25:

Essentially, antibodies are generated against the biologically active protein to be mimicked. The antibodies are then used as antigens to generate antibodies against the antibodies; some of the anti-antibodies having binding regions which mimic the biologically active protein. One an animal is confirmed to make anti-antibodies, a recombinant antibody library is generated using genetic material derived from the animal's spleen cells. The recombinant antibody library is then screened to identify a recombinant antibody which has a binding regions which mimic the biologically active protein. Such a recombinant antibody will compete with the biologically active protein such as in binding to monoclonal antibodies (MAbs) which specifically bind to the biologically active protein. Using the recombinant antibody library, one the recombinant antibody which has a binding regions which mimic the

> biologically active protein is identified, the amino acid sequence of the CDRs may be ascertained and that information is then used to synthesize small peptides which mimic the biologically active protein. (emphasis added).

The specification on col. 9, lines 39-63 discloses the use of GM-CSF antagonist peptides for the treatment of inflammatory diseases, including rheumatoid arthritis. However col. 9, lines 39-63 does not state that antibodies to M-CSF may be used to treat rheumatoid arthritis.

Therefore, the '460 patent does not disclose the use of M-CSF antibodies to treat rheumatoid arthritis. Accordingly, the '460 patent does not disclose all of the elements of the claimed invention and Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

II. REJECTION UNDER 35 U.S.C. § 103(a)

The Examiner rejected claims 34, 36, and 48-52 under 35 U.S.C. § 103(a) as allegedly being obvious over Lopez et al. (WO 00/09561) in view of "Campbell et al (IDS)". On December 6, 2004, Examiner Belyavskyi clarified via a telephone conversation with the undersigned that the reference referred to in the Office Action as "Campbell et al (IDS)" is Campbell et al. (1998) *The Journal of Immunology* 161: 3639-3644 ("Campbell et al. (1998)"). The Office Action acknowledged that Lopez et al. do not disclose the a method of using M-CSF antibodies. The Office Action alleged that it would have been obvious to apply the disclosure of Campbell et al. (1998) to that of Lopez et al. to obtain the presently claimed invention.

Applicants assert that the claims are not obvious in view of Lopez et al. in view of Campbell et al. (1998). As set forth in M.P.E.P. § 2143, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. In addition, the cited references, alone or in combination, must supply all of the elements of the claimed invention. Here, neither reference, alone or in combination disclose the limitation of M-CSF; Lopez et al., and Campbell et al. (1998), do not mention M-CSF. Accordingly, the cited references, alone or in combination, do not disclose all of the elements of the

claimed invention. It follows that a *prima facie* case of obviousness is not present in view of Lopez et al. and Campbell et al. (1998). Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at 734-622-2095.

Respectfully submitted,

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